1.0 INTRODUCTION, PURPOSE AND NEED

1.1 INTRODUCTION

The Brazos River Harbor Navigation District (BRHND) of Brazoria County, Texas (also known as Port Freeport) applied to the U.S. Army Corps of Engineers (USACE), Galveston District, for a Clean Water Act Section 404 permit and Rivers and Harbors Act Section 10 permit for dredge and fill activities related to the widening of portions of the Freeport Ship Channel on April 14, 2005. Activities subject to the jurisdiction of the USACE would include dredging in navigable waters to widen portions of the Freeport Harbor Jetty Channel and all of the Freeport Harbor Entrance Channel and placement of fill in waters of the U.S. Based on the Section 10/404 permit application submitted by Port Freeport to the USACE, the USACE determined that the permitting action for the proposed dredge and fill activities constitutes a major Federal action. In accordance with the National Environmental Policy Act (NEPA), this Environmental Impact Statement (EIS) has been prepared to analyze and disclose the potential impacts of the proposed project and reasonable alternatives on the natural and human environment. A permit application reflecting the applicant's plans for the proposed project is included in this document as Appendix A.

The Old Brazos River, a cutoff meander from the Brazos River, is present to the northwest of the project area. The Stauffer and Brazosport Turning Basins are present northwest of the project area and were originally part of the Old Brazos River prior to channelization for shipping into the Port of Freeport. The GIWW is present within the project area and provides a protected navigational shipping route along most of the Texas Gulf Coast. The Lower Turning Basin is present in the northern portion of the project area and connects to the Freeport Harbor Channel which extends southeasterly approximately 5 miles into the Gulf of Mexico. The Freeport Harbor Channel is located between the beach communities of Quintana and Surfside, southeast of the City of Freeport, Texas.

The proposed project site is located along the northern edge of the Freeport Harbor Jetty and Entrance Channels, between Surfside and Quintana, in Brazoria County, Texas (Figure 1.1-1). The Freeport Harbor Jetty and Entrance Channels are currently maintained by the USACE to a depth of -47 feet (ft) mean low tide (MLT) at a width of 400 ft. These existing channels are approximately 6.3 miles in length and approximately 400 ft in width. The side slopes of the channel are maintained at approximately 3 ft horizontal to 1 ft vertical (USACE, 1978).

Port Freeport proposes to widen, but not deepen, portions of the Freeport Harbor Jetty Channel and all of the Freeport Harbor Entrance Channel. Beginning at Channel Station 63+35 (see Figure 1.1-1), which is just about even with the center of the U.S. Coast Guard (USCG) Station access channel, the Jetty Channel will be gradually widened, at the authorized depth, up to an additional 150 ft over the next 1,835 ft to Channel Station 45+00. Over the next 500 ft, to Channel Station 40+00, the widening will be less gradual and will go from the additional 150 ft to an additional 200 ft. From Channel Station 40+00, through the rest of the Jetty Channel and to the end of the Entrance Channel at Channel Station -260+00, the channel

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3,500 1,750 0 3,500
Feet

N
W E
S

Freeport
STAUFFER TURNING BASIN
BRAZOS HARBOR
UPPER TURNING BASIN
BRAZOSPORT TURNING BASIN
LOWER TURNING BASIN
JETTY CHANNEL
Quintana
Surfside Beach
ENTRANCE & JETTY CHANNELS
ENTRANCE CHANNEL
PA-1
PA-7
PA-3
PA-2 (Seaway)
PA-85
PA-86/87
PA-88
EPA ODMDS (Maintanence Site)
45-Ft Project New Work Site
GULF OF MEXICO

Figure 1.1-1
Freeport Harbor Ship Channel

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will be widened an additional 200 ft. The length of channel that is proposed for widening is 32,335 ft or 6.1 miles, of which 5.7 miles will be widened by 200 ft. Additional information regarding the proposed project is presented in Section 2.0.

1.2 PURPOSE

The purpose of the proposed project is to widen the channel to eliminate existing operational constraints that include (a) one-way traffic, (b) daylight-only operations for larger vessels, and (c) restrictions that do not allow the larger vessels to enter the Port when winds exceed 20 knots or crosscurrents exceed 0.5 knots. The maximum ship dimensions permitted by the pilots at Freeport Harbor are: 825-ft length over all (LOA), 145-ft maximum beam, and 42-ft draft. Estimates by Hackett (2003) for Gulf Coast ports indicate an expected annual increase in tanker calls of 1.9% and dry bulk calls of 2.0%. Economic pressure and technological advances have generally influenced a trend toward larger ships, which has increased channel improvement needs. It is projected that there will be a significant overall increase in demand for shipping, because of globalization and large increases in commodity trade (Hackett, 2003). The existing fleet will grow and newer ships will likely be larger in pursuit of economic efficiency (Waters et al., 2000). The widening project is consistent with other regional navigation channel improvements in response to world fleet trends and contributes to NED goals. These problems are discussed in more detail below.

LOA Restrictions. The length limitation of 825 ft is enforced because cross winds and currents force tankers to "crab" at an angle through the entrance channel. Ships of greater length than 825 ft are not able to clear the jetties under adverse wind and current conditions. Waivers on ship length are granted on a case-by-case basis for ships as large as 900-ft LOA and 160-ft beam to transit the Freeport Harbor Channel, provided that winds are less than 15 knots and that there is no more than a 0.5 knot cross current at the mouth of the jetties. About three to four ships per month are granted these waivers. Numerous requests have been submitted for ships in the 920- to 950-ft LOA range to transit the Channel and these requests have been denied. When denied access to Freeport Harbor, these ships normally divert to Corpus Christi or New Orleans.

Beam Restrictions. The maximum beam permitted under normal operations is 145 ft. Vessels with larger beams require waivers to enter port.

One-Way Traffic Restriction. Because of the 400-ft width of the entrance and main channels, one-way ship traffic is always in effect in the Freeport Harbor Channel. This can result in delays when ship schedules coincide.

Daylight-Only Operation Restriction. Because of channel dimensions as well as the nature of the cargo of ships calling at Freeport Harbor, daylight-only operation is enforced on all vessels greater than 750 ft LOA or over 107 ft wide. This can result in waiting time of up to 12 hours, if ship arrival/departure occurs at dark.

1.3 NEED

The project need is the elimination of the operational constraints to allow vessels to avoid delays, thereby reducing shipping costs (more than $24MM over the 50-year life of the project [Martin Associates, 2006]) and logistical problems and increasing vessel safety.

The concept of public and private need for the proposed project is important to the balancing process of the USACE public interest review (33 CFR 320.4(a)(2)(i)). A private applicant's proposal may satisfy a public as well as a private need (e.g., providing the public with needed goods and services). A public sector applicant's project is presumed to address some public need, such as public recreation. With regards to private projects, Department of the Army regulations (33 CFR 320.4 (q)) state that the USACE will generally not concern itself with the question of whether a proposed project will earn a profit or become economically viable, or whether it is needed in the market place. In regards to public projects, the USACE can defer to a state or other government entity decision to spend non-Federal public money. However, regulations indicate that the USACE should make an independent review of the public need for a project from the perspective of the overall public interest. This independent review is relevant to the USACE permit decision. The USACE will question the public need for a project if the proposed project appears to be unduly speculative. In the public interest review, the USACE has the responsibility to balance public interest need or benefits against public interest detriments. The decision of whether to authorize a proposed project and the conditions under which it will be allowed are determined by the outcome of this general balancing process.

In the 905(b) analysis (USACE, 2002), the USACE noted the problems mentioned above; i.e., "that the relatively narrow (400-ft wide) entrance and main channels limit the Freeport Harbor Channel to one-way for all vessels and daylight-only operation for the larger vessels." It is also noted that "the light-loading, one-way traffic, and daylight-only operation result in significantly higher costs to users of Port Freeport than would be experienced if the harbor were enlarged and deepened. The transportation savings that would result from improvements at Freeport Harbor would be economic benefits to the nation." Thus the USACE has confirmed the need for the project and that the project serves the national interest. However, to reduce the time that is required for a Federal project to come to fruition and because of uncertainty in future Federal funding, Port Freeport has decided to undertake the widening project as a permit action. This will allow the economic benefits that will result from a widened channel to accrue more quickly.